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Eine neue Theorie über die Ursachen einiger Nervenkrankheiten, insbesondere der Neuritis und der Tabes. L. EDINGER. Leipzig, 1894. pp. 116.

This paper is one of a series of clinical lectures and consists chiefly of citations of clinical points taken from the daily experience of the author during the last three years. Its main interest is to be found in its general agreement, although covering a much wider field of nervous diseases, with the general trend of Batty Tuke's argument. All nervous diseases must be referred to functional rather than to structural causes. They can all be explained by Edinger upon the theory that nutritional regeneration fails to equal the destruction of substance occurring in the course of functional activity. One and the same exciting cause anæmia, syphilis, et. al. will thus produce disease in that part of the nervous system which is most severely taxed by the work of the individual. In officers, railroad employees and foresters we have tabes of the lower extremities; while from the same general physical condition we find cases of progressive paralysis cropping out in those who are engaged in mental work.

Untersuchungen über den feineren Bau des centralen und peripherischen Nervensystems. CAMILLO GOLGI. Translated from the Italian by Dr. R. Teuscher. Gustav Fischer, Jena, 1894. Quarto 272 pp. 30 quarto plates.

An epoch in the knowledge of the nervous system was marked by the appearance in 1885 of Golgi's book, 'Studi sulla fina Anatomia degli Organi Centrali del Sistema Nervoso.' The Italian edition has long been exhausted, as some of us have occasion to know who have had orders for the book placed for four or five years. The present fine edition of Fischer's will thus fill a long felt need. In it we have Golgi's most important communications between 1871 and 1893. His figures and descriptions of nerve cells with their processes, protoplasmic and nervous, have become so familiar that they need no explanation. But since Golgi first outlined his main positions a number of questions have come to be of immense importance to neurologists and we naturally turn to this latest edition of his works to find his present position clearly stated. Possibly first comes the question: What is the function of nervous and protoplasmic processes? Long before Golgi's work and the discovery of his staining method, histologists had recognized a difference between the processes which arise from the body of a nerve cell; but the methods of Deiters, Gerlach and others failed to demonstrate these to any great length. Moreover M. Schultze demonstrated with apparent clearness that the structure of both axis-cylinder and protoplasmic processes are alike in possessing ultimate nerve fibrils, and that these fibrils may enter a cell by one process and pass out by another without any branching or break of continuity in the cell. The very natural supposition then arose that the cells were connected by their protoplasmic processes, dendrons, with one another and either received sensory impressions or discharged motor impulses through their neurons, which were then supposed to be unbranched. A reflex arc might thus consist of the following parts: First, a sensory neuron, entering the cord through the dorsal root and passing to its sensory cell; second, the dendrons of this cell connecting with those of a motor cell; and third, a neuron passing from a motor cell to a muscle. Golgi succeeded in following out these processes much further than former histologists, to what would seem to be their ultimate terminations, and in no case did they unite with the dendrons of other cells. They did, however, show a general tendency to grow out towards the blood vessels and glia cells in the neighborhood and this fact led Golgi to advance the theory that dendrons are closely connected with the nutrition of the nerve cell. This position Golgi finds no reason to modify. The evidence which has been brought to bear

upon this point chiefly by Cajal and Van Gehuchten is, according to Golgi's view, purely theoretical and is not derived from any new facts discovered by them in nerve histology. The answer to this question is to be found where the reader is least likely to look for it, viz., in the last chapter and upon almost the last page of the book. This chapter is entitled, "Upon the origin of the fourth cranial nerve and a general question of cellular physiology which is connected with it." The particular point here is that the cells which give origin to the fourth nerve have a single neuron and no dendrons whatever. If on Cajal's hypothesis, that the dendrons are the organs of the nerve cells by which impulses are received and that the neuron furnishes the path for the discharge of the nerve impulse, how do cells like these having no trace of dendrons, receive stimuli? In order to bring the cells of the spinal ganglia into his system, Cajal has been obliged to suppose that the neuron to the skin is in reality to be considered a dendron. This, according to Golgi, is seriously straining facts to make them agree with theory.

The second important question upon which we desire to have Golgi's present opinion touches the relation of nerve cells to one another. Do their processes actually unite or do they merely come into contact? Golgi replies to this question with an entire chapter describing "The diffuse nervous network of the central organs of the nervous system and its physiological significance." In his former book he advances the view that the branches of the neurons unite to form a close-meshed network throughout the entire central gray matter. The great complexity of this structure made difficult the demonstration of actual union of processes from different cells; but Golgi now claims to have made preparations which leave no room for doubt. The contact theory has been so ably advocated of late by Ramon y Cajal, Kölliker, Van Gehuchten and others that this word from Golgi is most opportune. Golgi also insists more strongly than ever, if that is possible, upon the characteristic difference between neurons and dendrons, and to the objection of Obersteiner, that the Golgi method does not enable us to distinguish with certainty between these two kinds of processes, Golgi replies that this only proves that Obersteiner has never been able to obtain good preparations.

The bearing of Golgi's view on his conception of cerebral localization may be gathered from the emphasis which he places upon the fact that we have absolutely no subdivision of the cerebral cortex corresponding to the so-called "centres" of the localization school. No anatomical divisions exist, and in histological character the entire cortex is of essentially the same structure. In this there is no denial of a certain degree of localization. Regions, not sharply defined, into which a nerve enters directly or from which it most immediately springs, are naturally more distinctly concerned with its special function. But the presence of a diffuse nervous felt-work including the entire central gray matter must tend to bring us back toward something like the old position of Flourens, viz., that the entire brain, being a unit in structure, is also a unit in function.

Ueber ein neues Eintheilungsprincip der Grosshirnoberfläche. P. FLECHSIG. *Neurologisches Centralblatt*, XIII, p. 674, Leipzig, 1894.

The new division of the cerebral surfaces suggested by Professor Flechsig is the natural result of his long and eminently successful studies upon fiber systems in the brain and the order of their development in the child and human embryo. By these fiber-systems the cerebral hemispheres may be divided into two grand divisions. The first includes those areas which receive, or give origin to sensory or motor fibers (the sensory and motor areas of the localizationists) besides a few